UNITED STATES PATENT AND TRADEMARK OFFICE

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10/807,662	03/24/2004	Vahit Hakan Hacigumus	SVL920030133US1	6512

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EXAMINER
DAVIS, ZACHARY A

ART UNIT	PAPER NUMBER
2137	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/807,662	HACIGUMUS ET AL.
	Examiner	**Art Unit**
	Zachary A. Davis	2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 March 2004</u>.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-44</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-44</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>18 June 2004</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>20040503, 20040810, 20070417</u>.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to because it is not clear whether the two items labeled "intermediate results 118" in Figure 1 are necessarily the same. In particular, it appears that the results would be further processed after being sent from the server computer, from the description in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3.   The abstract of the disclosure is objected to because it is not in narrative form but rather corresponds substantially to Claim 1. Further, the abstract is a single sentence fragment. Correction is required. See MPEP § 608.01(b).

4.   The disclosure is objected to because of the following informalities:

The specification contains minor typographical and other errors. For example, on page 6, line 16, it appears that "commodotization" is intended to read "commoditization". It appears a period should be added at the end of the sentence on page 7, line 9. In the description of Figure 1 at page 7, line 15-page 8, line 9, it appears that the various references to "intermediate results set 118" may not actually refer to the same results set, and if so, clarification should be made to differentiate between the various sets. On

page 13, line 5, the placement of the parentheses in the phrase "generating a (possibly

super-set) of results" is generally unclear. On page 39, line 13, it appears that "that" is

intended to read "than".

Appropriate correction is required. The above is not intended as an exhaustive

list of errors in the specification. The lengthy specification has not been checked to the

extent necessary to determine the presence of all possible minor errors. Applicant's

cooperation is requested in correcting any errors of which applicant may become aware

in the specification.

Claim Objections

5.   Claims 14, 17, 30, 31, and 44 are objected to because of the following

informalities:

Claims 14, 30, and 44 each use numerals in parentheses for numbering a list of

items. However, the use of numerals in parentheses is restricted to denoting reference

numerals from the drawing figures.

Claims 17 and 31 each recite "encrypting data at client computer" in line 3. It

appears that "a" should be inserted before "client".

Appropriate correction is required.

6.   Applicant is advised that should claim 15 be found allowable, claim 16 will be

objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two

claims in an application are duplicates or else are so close in content that they both

cover the same thing, despite a slight difference in wording, it is proper after allowing

one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

Claim Rejections - 35 USC § 101

7.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

8.   Claims 17-44 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Claims 17-44 are directed to methods and software implementations of

corresponding methods. However, these methods appear to be solely directed to

abstract ideas without a clear practical application. The end result of the processes

performed appears to be the production of "actual results". However, it is not clear from

the claims or specification what these results actually encompass. It does not appear

that the claimed "actual results" would cause a physical transformation. Further, it does

not appear that the "actual results" constitute a useful, concrete, and tangible result that

would constitute a practical application of the abstract idea. There is no particular use

claimed or described for these "actual results", so they are not clearly useful. Further,

these results would appear, at best, to be pure mathematical results, which is generally

abstract and therefore not tangible. Additionally, without further definition of what the

"actual results" encompass, it is not possible to clearly determine whether the

repeatable production of the same results would be possible, which would be required

to render the results concrete. Therefore, because the claims are directed to abstract

ideas without a clear practical application, the claims are non-statutory.

Further, Claims 31-44 are directed to an "article of manufacture embodying logic

for performing computations". It appears that the logic could encompass software *per*

se, which is functional descriptive material that is not tangibly embodied on a computer-

readable medium. This is not statutory subject matter because software in and of itself

does not constitute either a process or computer components that would have sufficient

structure to constitute a machine or manufacture under 35 U.S.C. 101. See MPEP §

2106.01.

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

10.   Claims 1-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the

invention.

A determination of a failure to comply with the enablement requirement is made considering the undue experimentation factors set forth in MPEP § 2164.01(a). In the present application, the factors that appear to weigh most heavily are the breadth of the claims (MPEP § 2164.08), the amount of direction provided by the inventor (MPEP § 2164.03), and the existence of working example (MPEP § 2164.02). Independent Claims 1, 15, 16, 17, and 31 each broadly recite the limitation "in order to produce actual results" or "producing actual results". Dependent Claims 9, 25, and 39 also recite the limitation "in order to produce actual results". These limitations constitute an extremely broad recitation of a description of results produced. However, there is nothing in the specification that suggests what might distinguish "actual" results from any other results that are produced. The only descriptions in the specification largely use the same language as is present in the claims. These descriptions clearly do not provide a working example, other than to suggest that the actual results are displayed to the user (page 8, line 9 of the specification). This indicates that there is little direction provided by the inventor and no clear working example. Combined with the broad recitations of the claims, this suggests that the enablement of the description is not commensurate in scope with the claims (MPEP § 2164.08) and that undue experimentation would be required to make or use the invention based on the disclosure (MPEP § 2164.06).

Claims not specifically referred to above are rejected due to their dependence on a rejected base claim.

11.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

12.   Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 1 uses the pronoun "it" in lines 8 and 9. While it appears that the first use

is intended to refer to the intermediate results set, it is not clear if the second use is also

intended to refer to the intermediate results set. If pronouns are used, care must be

taken to ensure that their antecedents are clear. Further, Claim 1 recites the limitation

"to produce actual results" in lines 10-11. This is generally unclear, as it is not clear

how "actual results" are distinguished from any other results, such as the intermediate

results set, or any other results of any of the functions performed by the claimed

system. Further, there is nothing in the claims or specification that defines or

distinguishes "actual results" from any other results. This renders the claim indefinite.

Claim 2 recites several additional functions (decrypting, performing operations,

re-encrypting, and returning) that the system performs. However, it is not clear at what

point (i.e. in what order) these operations are to be performed. This renders the claim

indefinite.

Claim 6 recites the limitation "the intermediate results set" in line 2. Although

there is only one intermediate results set explicitly referred to in Claim 1, it is operated

upon several times within the claim, which would result in multiple intermediate results

sets, and therefore, it is not clear to which of these sets the limitation is intended to refer.

Claim 8 recites the limitation "different placements of the round-trip filtering operator" within execution plans. It is not clear exactly what is intended by the use of the term "placements"; it is not clear if this is intended to refer to an ordering, either temporal or spatial or otherwise, of the operator, or to another sort of placement. Further, the claim recites the limitation "optimizes placement"; however, there is no standard set forth with respect to which the optimization is performed. Thus, this is a relative term for which no basis or standard of comparison has been clearly set forth in the claims or specification. See MPEP § 2173.05(b).

Claim 9 recites the limitation "the intermediate results set" in line 2. Although there is only one intermediate results set explicitly referred to in Claim 1, it is operated upon several times within the claim, which would result in multiple intermediate results sets, and therefore, it is not clear to which of these sets the limitation is intended to refer. Claim 9 also recites the limitation "in order to produce actual results". As described with respect to independent Claim 1, it is not clear how "actual results" are distinguished from any other results.

Claim 10 recites the limitation "different placements of the last-trip decryption operator" within execution plans. It is not clear exactly what is intended by the use of the term "placements"; it is not clear if this is intended to refer to an ordering, either temporal or spatial or otherwise, of the operator, or to another sort of placement. Further, the claim recites the limitation "optimizes placement"; however, there is no

standard set forth with respect to which the optimization is performed. Thus, this is a relative term for which no basis or standard of comparison has been clearly set forth in the claims or specification. See MPEP § 2173.05(b).

Claim 15 uses the pronoun "it" in line 6. While it appears that the first use is intended to refer to the intermediate results set, it is not clear if the second use is also intended to refer to the intermediate results set. If pronouns are used, care must be taken to ensure that their antecedents are clear. Further, Claim 15 recites the limitation "to produce actual results" in line 8. This is generally unclear, as it is not clear how "actual results" are distinguished from any other results, such as the intermediate results set, or any other results of any of the functions performed by the claimed system. Further, there is nothing in the claims or specification that defines or distinguishes "actual results" from any other results. This renders the claim indefinite.

Claim 16 uses the pronoun "it" in line 6. While it appears that the first use is intended to refer to the intermediate results set, it is not clear if the second use is also intended to refer to the intermediate results set. If pronouns are used, care must be taken to ensure that their antecedents are clear. Further, Claim 16 recites the limitation "to produce actual results" in line 8. This is generally unclear, as it is not clear how "actual results" are distinguished from any other results, such as the intermediate results set, or any other results of any of the functions performed by the claimed system. Further, there is nothing in the claims or specification that defines or distinguishes "actual results" from any other results. This renders the claim indefinite.

Claim 17 recites the limitation "the transferred intermediate results set" in line 13.

It is not clear whether this is intended to refer to the intermediate results set transferred

in line 7 or the one transferred in line 12. Further, Claim 17 recites the limitation

"producing actual results" in line 17. This is generally unclear, as it is not clear how

"actual results" are distinguished from any other results, such as the intermediate

results sets, or any other results of any of the functions performed by the claimed

system. Further, there is nothing in the claims or specification that defines or

distinguishes "actual results" from any other results. This renders the claim indefinite.

Claim 18 recites several additional steps (decrypting, performing operations, re-

encrypting, and returning) that the system performs. However, it is not clear at what

point (i.e. in what order) these operations are to be performed. This renders the claim

indefinite. Further, Claim 18 recites "the intermediate results set"; however, it is not

clear whether this is intended to refer to the first intermediate results set recited at lines

5-6 of Claim 17, the updated intermediate results set at line 10 of Claim 17, or the new

intermediate results set at line 14 of Claim 17, for example.

Claim 22 recites "the intermediate results set"; however, it is not clear whether

this is intended to refer to the first intermediate results set recited at lines 5-6 of Claim

17, the updated intermediate results set at line 10 of Claim 17, or the new intermediate

results set at line 14 of Claim 17, for example.

Claim 24 recites the limitation "different placements of the round-trip filtering

operator" within execution plans. It is not clear exactly what is intended by the use of

the term "placements"; it is not clear if this is intended to refer to an ordering, either

temporal or spatial or otherwise, of the operator, or to another sort of placement.

Further, the claim recites the limitation "optimizes placement"; however, there is no

standard set forth with respect to which the optimization is performed. Thus, this is a

relative term for which no basis or standard of comparison has been clearly set forth in

the claims or specification. See MPEP § 2173.05(b).

Claim 25 recites "the intermediate results set"; however, it is not clear whether

this is intended to refer to the first intermediate results set recited at lines 5-6 of Claim

17, the updated intermediate results set at line 10 of Claim 17, or the new intermediate

results set at line 14 of Claim 17, for example. Claim 25 also recites the limitation "in

order to produce actual results". As described with respect to independent Claim 17, it

is not clear how "actual results" are distinguished from any other results.

Claim 26 recites the limitation "different placements of the last-trip decryption

operator" within execution plans. It is not clear exactly what is intended by the use of

the term "placements"; it is not clear if this is intended to refer to an ordering, either

temporal or spatial or otherwise, of the operator, or to another sort of placement.

Further, the claim recites the limitation "optimizes placement"; however, there is no

standard set forth with respect to which the optimization is performed. Thus, this is a

relative term for which no basis or standard of comparison has been clearly set forth in

the claims or specification. See MPEP § 2173.05(b).

Claim 31 recites the limitation "the transferred intermediate results set" in line 13.

It is not clear whether this is intended to refer to the intermediate results set transferred

in line 7 or the one transferred in line 12. Further, Claim 31 recites the limitation

"producing actual results" in line 17. This is generally unclear, as it is not clear how

"actual results" are distinguished from any other results, such as the intermediate

results sets, or any other results of any of the functions performed by the claimed

system. Further, there is nothing in the claims or specification that defines or

distinguishes "actual results" from any other results. This renders the claim indefinite.

Claim 32 recites several additional steps (decrypting, performing operations, re-

encrypting, and returning) that the system performs. However, it is not clear at what

point (i.e. in what order) these operations are to be performed. This renders the claim

indefinite. Further, Claim 32 recites "the intermediate results set"; however, it is not

clear whether this is intended to refer to the first intermediate results set recited at lines

5-6 of Claim 31, the updated intermediate results set at line 10 of Claim 31, or the new

intermediate results set at line 14 of Claim 31, for example.

Claim 36 recites "the intermediate results set"; however, it is not clear whether

this is intended to refer to the first intermediate results set recited at lines 5-6 of Claim

31, the updated intermediate results set at line 10 of Claim 31, or the new intermediate

results set at line 14 of Claim 31, for example.

Claim 38 recites the limitation "different placements of the round-trip filtering

operator" within execution plans. It is not clear exactly what is intended by the use of

the term "placements"; it is not clear if this is intended to refer to an ordering, either

temporal or spatial or otherwise, of the operator, or to another sort of placement.

Further, the claim recites the limitation "optimizes placement"; however, there is no

standard set forth with respect to which the optimization is performed. Thus, this is a

relative term for which no basis or standard of comparison has been clearly set forth in

the claims or specification. See MPEP § 2173.05(b).

Claim 39 recites "the intermediate results set"; however, it is not clear whether

this is intended to refer to the first intermediate results set recited at lines 5-6 of Claim

31, the updated intermediate results set at line 10 of Claim 31, or the new intermediate

results set at line 14 of Claim 31, for example. Claim 39 also recites the limitation "in

order to produce actual results". As described with respect to independent Claim 31, it

is not clear how "actual results" are distinguished from any other results.

Claim 40 recites the limitation "different placements of the last-trip decryption

operator" within execution plans. It is not clear exactly what is intended by the use of

the term "placements"; it is not clear if this is intended to refer to an ordering, either

temporal or spatial or otherwise, of the operator, or to another sort of placement.

Further, the claim recites the limitation "optimizes placement"; however, there is no

standard set forth with respect to which the optimization is performed. Thus, this is a

relative term for which no basis or standard of comparison has been clearly set forth in

the claims or specification. See MPEP § 2173.05(b).

Claims not specifically referred to above are rejected due to their dependence on

a rejected base claim.

13.   Claims 17-44 are rejected under 35 U.S.C. 112, second paragraph, as being

incomplete for omitting essential steps, such omission amounting to a gap between the

steps. See MPEP § 2172.01. The omitted steps are: decrypting the intermediate

results set. Claims 17 and 31 each recite encrypting data in line 3, and each recite re-encrypting data in line 11; however, there is never a step of decryption performed. It is noted that the decryption recited in dependent Claims 18 and 32 does not clearly remedy this omission because another step of re-encrypting is also recited in those claims, and it is not clear whether the steps of Claims 18 and 32 would be performed before or after the re-encryption in line 11 of Claims 17 and 31.

Examiner's Note

14.   Because the claims are rendered indefinite by the several issues detailed above in reference to the rejections under 35 U.S.C. 112, second paragraph, the claims are not enabled as detailed in reference to the rejection under 35 U.S.C. 112, first paragraph, and the majority of the claims are also directed to non-statutory subject matter as described above in reference to the rejection under 35 U.S.C. 101, it has not been possible to determine the scope of the claims, and therefore it has not been possible to fully search the prior art for the claimed subject matter in order to make a determination regarding the patentability of the claims with respect to novelty under 35 U.S.C. 102 and non-obviousness under 35 U.S.C. 103. The claims have been interpreted to the extent possible in light of the issues of indefiniteness, lack of enablement, and non-statutory subject matter. A search has been made to the extent possible, and documents that appear to be relevant are cited below.

Claim Rejections - 35 USC § 102

15.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed
> publication in this or a foreign country, before the invention thereof by the applicant for a patent.

16.   Claims 1-44 are rejected under 35 U.S.C. 102(a) as being anticipated by

Hacigumus et al, "Executing SQL over Encrypted Data in the Database-Service-

Provider Model" (cited by Applicant).

In reference to Claims 1-14, Hacigumus discloses a system that includes client

and server computers and a network connecting them (see page 217, Figure 1), in

which data from the client computer is encrypted by the client and hosted by the server,

the encrypted data is operated on by the server to produce intermediate results, which

are sent from the server to the client where the intermediate results are further operated

on, sent back to the server for further operation, and sent back to the client again to

produce a result (page 226, section 7, conclusion; pages 223-224, section 5, for

example, where encrypted data tuples are sent back and forth twice between the server

and the client, and remain encrypted while being processed at the server).

Claims 15 and 16 are directed to systems corresponding substantially to the

system of Claim 1, and are rejected by a similar rationale.

Claims 17-30 are directed to methods corresponding to the functions of the

systems of Claims 1-14, and are rejected by a similar rationale.

Claims 31-44 are directed to software implementations of the methods of Claims

17-30, and are rejected by a similar rationale.

Conclusion

17.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

    a.   Goldstein, US Patent 5963642, discloses a database encryption

mechanism having secure storage of semantically encrypted data.

    b.   Lirov et al, US Patent 6785810, discloses a system for storing encrypted

database records where sensitive data remains encrypted.

    c.   Rice et al, US Patent 6957341, discloses a system in which computations

are securely outsourced to a computing center and are disguised in transport.

    d.   Nishizawa et al, US Patent 7228416, discloses a system in which contents

of database queries are encrypted.

    e.   Newman et al, US Patent 7266699, discloses a system for encrypting a

database.

    f.   Agarwal et al, European Patent Application EP 0855656 discloses a

system for optimizing a query processing tree in a relational database.

18.   This Office action has an attached requirement for information under 37 CFR

1.105. A complete reply to this Office action must include a complete reply to the

attached requirement for information. The time period for reply to the attached

requirement coincides with the time period for reply to this Office action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Zachary A. Davis whose telephone number is (571)272-

3870. The examiner can normally be reached on weekdays 8:30-6:00, alternate

Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ZAD/
Examiner, Art Unit 2137

/Emmanuel L. Moise/
Supervisory Patent Examiner, Art Unit 2137

Requirement for Information under 37 CFR 1.105

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please **provide answers** to each of the following interrogatories eliciting factual information:

In general, where in the parent application (Serial No. 10/449,421) is support found for the claim limitations, particularly those of the independent claims? More specifically, where is support (i.e. enabling written description as per 35 U.S.C. 112, first paragraph) in the parent application found for the limitations in independent Claim 1 regarding returning intermediate results to the server computer and sending the intermediate results back again to the client computer, and the more detailed related limitations of dependent Claim 2? Similarly, where is support in the parent application found for the corresponding limitations of independent Claims 15 and 16? Where is support in the parent application found for corresponding limitations in independent Claims 17 and 31 regarding re-encrypting updated intermediate results and transferring the re-encrypted intermediate results to the server and transferring the new intermediate results back to the client, and the more detailed related limitations of dependent Claims 18 and 32?

Further in response to this requirement, please **provide copies** of each

publication which any of the applicants authored or co-authored and which describe the

disclosed subject matter of the present application.

In responding to those requirements that require copies of documents, where the

document is a bound text or a single article over 50 pages, the requirement may be met

by providing copies of those pages that provide the particular subject matter indicated in

the requirement, or where such subject matter is not indicated, the subject matter found

in applicant's disclosure.

The fee and certification requirements of 37 CFR 1.97 are waived for those

documents submitted in reply to this requirement. This waiver extends only to those

documents within the scope of this requirement under 37 CFR 1.105 that are included in

the applicant's first complete communication responding to this requirement. Any

supplemental replies subsequent to the first communication responding to this

requirement and any information disclosures beyond the scope of this requirement

under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR

1.97.

The applicant is reminded that the reply to this requirement must be made with

candor and good faith under 37 CFR 1.56. Where the applicant does not have or

cannot readily obtain an item of required information, a statement that the item is

unknown or cannot be readily obtained may be accepted as a complete reply to the

requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete

reply to the enclosed Office action must include a complete reply to this requirement.

The time period for reply to this requirement coincides with the time period for reply to

the enclosed Office action.

/Emmanuel L. Moise/

Supervisory Patent Examiner, Art Unit 2137